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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/991,874	11/26/2001	Toshiaki Hasegawa	1417-370	3253

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EXAMINER

LISH, PETER J

ART UNIT	PAPER NUMBER
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1754

DATE MAILED: 10/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/991,874	Applicant(s) HASEGAWA ET AL.	
	Examiner Peter J Lish	Art Unit 1754	

-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6,7,9-12 and 30-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6,7,9-12 and 30-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Applicant's arguments filed 7/25/03 have been fully considered but they are not persuasive. Applicant argues that the fuel feed port and the oxygen-containing gas feed port are opened on the surface of the first reaction zone. However, the claim does not reflect this feature. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., ports opened on the surface of the reaction zone) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Furthermore, it is unclear as to what is meant by the ^{opened on the} "surface of the first reaction zone".

Applicant's arguments with respect to the rejections under 35 U.S.C. 112 have been fully considered and are persuasive. The 35 U.S.C. 112 rejections of the previous office action have been withdrawn.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

Claims 6 and 32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 6 recites that the oxygen-gas containing feed port is non-circular, yet limits the diameter of the opening. It is indefinite as to how a non-circular shape may have a constant diameter. Claim 32 recites the use of multiple fuel and oxygen-containing

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gas feed ports, however, claim 30, to which it depends recites that the use of “a fuel feed port and a oxygen-containing gas feed port”. It is unclear as to whether a single fuel feed port and a single oxygen-containing gas feed port exist, or whether multiple fuel and oxygen-containing gas feed ports exist.

Claim Rejections - 35 USC § 102

Claims 10-12 and 30-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Mise et al. (USPN 5,772,975).

Mise et al. disclose a process for the production of carbon black. The process involves three zones, a combustion zone (A), a reaction zone (B), and a reaction termination zone (C). In the combustion zone, the fuel and the oxygen-containing feed port open from the same side of the reactor in a spaced apart relationship. The combustion zone is desired to be a sufficiently high temperature atmosphere so that the starting material hydrocarbon can be uniformly vaporized and thermally decomposed, and the temperature is preferably at least 1,600 °C, more preferably from 1,700 to 2,400 °C. It is inherent that the temperature in the first (combustion) zone be at least 1,600 °C, in order to provide the desired temperature for the second (reaction) zone. Additionally, the oxygen concentration in the combustion gas is preferably at most 3%, more preferably from 0.05 to 1% (column 3, lines 3-25). Regarding claim 31, Mise teaches a throttle portion, or choke, in the reaction zone in order to improve reaction efficiency. No difference is seen between the process of Mise et al. and that of the instantly claimed invention.

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Claims 30-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Sakaue et al. (US 5,264,199).

Sakaue discloses a process for the formation of carbon black, which contains three zones, a first reaction zone for the burning of fuel and oxygen, a second reaction zone, having a throat or choke, for the reaction of the combustion gas with hydrocarbon feedstock, and a third reaction zone providing water spray to terminate the reaction. In the first zone, the combustion zone, the fuel and the oxygen-containing gas feed ports open from the same side of the reactor in an independent and spaced apart relationship, with the fuel feed ports being located in each of the oxygen-containing gas feed ports. No difference is seen between the process of Sakaue et al. and that of the instantly claimed invention.

Claims 7 and 9 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Mise et al.

Mise et al. is applied above. Regarding claim 7, Mise does not explicitly teach the relationship connecting the distance between the crossing point of the fuel and air flows and the opening of the air feed port and the opening diameter of the air feed port. However, it is expected that the distance is at least twice the diameter because the fuel feed port is seen to extend a distance of at least twice the diameter in Figure 1.

Regarding claim 9, Mise et al. do not explicitly teach the flow rate of the oxygen-containing feed gas. However, it is expected that the flowrate of the oxygen-containing feed stream is above 55 m/s because the amount of air is between 427 and 586 km³/h and the combustion zone has an internal diameter of 50mm. Alternatively, the use of a specific flow rate

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is deemed to be the optimization of a known process, which could have been found through routine experimentation, and is held to be obvious. *In re Boesch*, 205 USPQ 215. It would have been obvious to one of ordinary skill at the time of invention to provide the oxygen-containing feed gas at a flow rate greater than 55 m/s in order to produce an amount of combustion gas which is effective for the decomposition of the carbon black starting material.

Claim Rejections - 35 USC § 103

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mise et al.

Mise et al. is applied above. Mise does not explicitly teach that oxygen-containing gas feed port have a specific shape or specific dimensions. It is, however, expected that the distance between the feed port and the inner wall of the reactor is less than 1.5 times the opening diameter of the port, because the feed port is seen to open up from the inner wall of the reactor, resulting in a distance of zero (Figure 1). While the shape of the opening is not specifically taught, the use of a non-circular opening would have been obvious to one of ordinary skill at the time of invention, because the selection of shape is held to be obvious by *In re Daily et al.*, 149 USPQ 47.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J Lish whose telephone number is 703-308-1772. The examiner can normally be reached on 9:00-6:00 Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 703-308-3837. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



PL

STUART L. HENDRICKSON
PRIMARY EXAMINER